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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,600	03/28/2001	Kiyohide Satoh	2355.12112	1899

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

LAU, TUNG S

ART UNIT	PAPER NUMBER
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2863

DATE MAILED: 06/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/818,600

Applicant(s)

SATO ET AL.

Examiner

Tung S Lau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-11, 13-15, 17,21 and 23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

- 5) ☐ Claim(s) _____ is/are allowed.

- 6) ☒ Claim(s) 1-6,8-11,13,14,21 and 23 is/are rejected.

- 7) ☒ Claim(s) 15 and 17 is/are objected to.

- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 21, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13, 14, 23 are rejected under 35

U.S.C. 102(e) as being anticipated by Ohshima et al. (U.S. Patent 6,522,312).

Regarding claim 1:

Ohshima discloses an information processing apparatus that derives the calibration information needed to measure the position and/or attitude of a measuring object based on the output values of a position and/or attitude sensor which is used by a mixed reality display device (abstract), comprising an input unit adapted to enter information about a match between the position and/or attitude of a real image (Col. 3-4, Lines 35-4), which changes according to movement of the mixed reality display device (fig. 2), of a measuring object and a predetermined position and/or attitude of a virtual image of the measuring object; an acquisition unit adapted to acquire the output values from the position and/or attitude sensor according to the input by said input unit (fig. 19, Col. 7, Lines 25-

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67); and an operation unit adapted to derive the calibration information, based on the predetermined position and/or attitude and the output values of the position and/or attitude sensor acquired by said acquisition unit (fig. 19, Col. 7, Lines 25-67).

Regarding claim 21:

Ohshima discloses an information processing method that derives the calibration information needed to measure the position and/or attitude of a measuring object based on the output values of a position and/or attitude sensor which is used by a mixed reality display device (abstract) comprising the steps of entering a real image derived from a real image input unit (Col. 3, Lines 35-67); generating a virtual image of a measuring object having a predetermined position and/or attitude (Col. 7, Lines 25-67, fig. 19); inputting a position and/or attitude information from the sensor when a position and/or attitude of the measuring object included in the real image matches a position and/or attitude of a virtual image of the measuring object by changing a position and/or attitude of the real image input unit (Col. 3-4, Lines 47-35), and generating calibration information from the inputted position and/or attitude information (Col. 5-6, Lines 40-45).

Regarding claim 2, 3, 4, 5, 6, 8, 9, 10, 11, 13, 14, 23:

Ohshima discloses the information processing apparatus wherein said position and/or attitude sensor has been connected directly or indirectly to said measuring object and the output values of said sensor are information that represents the position and/or attitude of said sensor itself in the sensor coordinate system (fig.

14, (Col. 3-4, Lines 35-65); and said calibration information (Col. 3-4, Lines 66-23), contains first coordinate transformation information for converting the position and/or altitude of said sensor itself in the sensor coordinate system into the position and/or altitude of said measuring object in the sensor coordinate system and second coordinate transformation information for converting the position and/or attitude in the sensor coordinate system into the position and/or attitude in a global coordinate system (fig. 15, 16, 17, unit S510, fig. 19).

The information processing apparatus further comprising guiding means for guiding said measuring object to said predetermined position and/or attitude (fig. 7, 5060L, 5060R, 240L, 240R, fig. 19).

The information processing apparatus wherein the measurement of said position and/or attitude is measurement of position and attitude (fig. 1, fig. 15, Col. 7, Lines 25-67), and said Sensor is a position and attitude sensor; and said operation unit performs the process of determining attitude information among said first coordinate transformation and position information among said second coordinate transformation information (Col. 3-4, Lines 35-30, fig. 17-19).

The information processing apparatus wherein the measurement of said position and/or attitude is measurement of only attitude, and said sensor is an attitude sensor; and said operation unit performs the process of determining pitch-angle and roll-angle information among said first coordinate transformation information and yaw-angle information among said second coordinate transformation information (Col. 20, Lines 29-67).

The information processing wherein the measurement of said position and/or attitude is measurement of only attitude, and said sensor is an attitude sensor; and said operation unit performs the process of determining yaw-angle information among said second , coordinate transformation information (Col. 20, Lines 29-67).

The information processing apparatus wherein said measuring object is the viewpoint of the user observing a display device that a displays virtual space superimposed over the real space transmitted optically through a display screen (fig. 7, unit 5030, 210L, 210R), capture image of real space (fig. 2, unit 230),

The information on processing apparatus wherein said guiding means comprises geometry information store means for storing geometry information of an object; picture generation means for calculating the two-dimensional appearance of said object expected to be observe on said display screen when said user observes said display screen in said predetermine position/attitude (Col. 3-4, Lines 35-67) , based on said predetermined position/attitude of said point and the geometry information of said object stored in said geometry information storage means to generate its picture; and picture presentation means for presenting said picture generated by said picture generation means on s id display screen (Col. 3-4, Lines 35-67); and wherein information processing apparatus moves the viewpoint of said user to said predetermined position/attitude by moving it such that the image of real space observed through said display screen and the image of said

object displayed on said display screen will match geometrically on said display screen (fig. 17, unit S510).

The information processing apparatus wherein said guiding means comprises geometry information storage means for storing geometry information of an object; picture generation means for calculating the two-dimensional appearance of said object expected to be observed on said display screen when said imaging means captures real space in said predetermined position/attitude (Col. 3-4, Lines 35-35) , based on said predetermined position/attitude of said viewpoint and the geometry information of said object stored in a said geometry information storage means (Col. 4, Lines 25-67) , and superimposing its picture over the picture of real space captured by said imaging means to generate a superimposed picture (fig. 17, 19, 22, 26); and picture presentation for presenting said superimposed picture generated by said picture generation means to the operator; and wherein said operator moves the viewpoint of said imaging means to said predetermined position/attitude by moving said imaging means in such a way that the picture of said real space and image of said object superimposed over it will match geometrically on said superimposed picture presented by said picture presentation means (Col. 7-8, Lines 25-35). The use of market position information (fig. 1, 8, 16, unit S5060), geometry information contains shape information of the object (fig. 1), stores the program code to execute the information processing (fig. 22, Col. 1, Lines 5-33).

Claim Objections

2. Claims 15, 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitation of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: prior art fail to teach the use of wire frame image of the object, the switching means between the presentation mode and derivation mode of the object.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ohshima et al. (U.S. Patent Application 2002/0084974) and Yonezawa et al. (U.S. Patent Application 2002/0075286) both disclose the use of mixed reality information processing system.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 703-305-3309.

The examiner can normally be reached on M-F 9-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TC2800 RightFAX Telephone Numbers : TC2800 Official Before-Final RightFAX - (703) 872-9318, TC2800 Official After-Final RightFAX - (703) 872-9319

TC2800 Customer Service RightFAX - (703) 872-9317

TL

June 3, 2003


John Barlow
Supervisory Patent Examiner
Technology Center 2800